

REMARKS

1. Status of the Claims

Claims 12-22 are currently pending in the application. Claims 12, 13, 17-18, and 20-22, have been amended, and Claim 14 has been deleted.

2. Claim Rejections Under 35 U.S.C. §112

The Examiner has rejected Claims 17, 18 and 20-22 under 35 U.S.C. §112, second paragraph, based on the contention that they are indefinite as written. Applicant respectfully traverses the Examiner's rejections. Notwithstanding the traversal, Applicant has amended the claims to better clarify the invention. As amended, Applicant submits that the Examiner's rejections under §112 have now been overcome.

3. Claim Rejections Under 35 U.S.C. §102

The Examiner has rejected Claims 12, 13, 15, and 17-19 under 35 U.S.C. §102(b), based on the contention that they are anticipated by one or more of EP Patent No. 0 598 689 (EP '689), or U.S. Patent No. 2,777,427, issued to Nichols (Nichols '427). Applicant respectfully traverses the Examiner's rejections. Notwithstanding the Applicant's traversal, Applicant has amended Claim 12 to include the limitations of Claim 14, which the Examiner did not reject under §102. Therefore, Applicant submits that the Examiner's rejections under §102 have now been overcome.

4. Claim Rejections Under 35 U.S.C. §103

The Examiner has additionally rejected Claims 14, 16 and 20-22 under 35 U.S.C. §103, based on the contention that they are unpatentable over the combination of one or more of EP '689 in view of U.S. Patent No. 5,560,282, issued to Trenner et al (Trenner '282), or Nichols '427 in view of Trenner '282. Applicant again traverses the Examiner's rejections. As Claim 12 now includes the limitations of former Claim 14, Applicant will address the Examiner's rejections towards that claim only.

Claim 12, as amended, claims, *inter alia*, a pneumatic actuator having a housing with a pneumatic cylinder, at least one piston and at least one shaft. Specifically, the shaft has two bearing sites that form the areas where the shaft has its greatest diameter. By forming the shaft with the bearing sites having the greatest diameter, with the smaller-diameter toothed area therebetween, a beneficial structure for the pneumatic actuator is achieved. Such a structure allows the shaft to be easily guided from the outside of the structure into the housing, and ensures that the shaft fits within the area of the bearing sites. This structure additionally eliminates the need for separate bearings by allowing the shaft to be mounted directly in the housing at the two bearing sites, and allows the shaft to be mounted with minimal force – i.e. force differences between the different bearing areas (from different bearing site diameters) are eliminated.

Such a device is not shown in the combination of references cited. Specifically, neither EP '689 nor Trenner '282 discloses a shaft having bearing areas of the same diameter. This structure is specifically claimed in newly amended Claim 12 by stating that both bearing sites form the areas with the greatest (singular) diameter for the shaft. Thus, initially, the Examiner's combination of EP '689 and Trenner '282 does not show

the present invention as claimed.

Furthermore, given the teachings of EP '689 and Nichols '427, one of ordinary skill in the art would never combine those two references to solve any of the same problems discussed above. EP '689 discloses a shaft and a piston in which a segment of the piston engages a groove in the shaft. The structure in EP '689, however, results in a force being created in the axial direction due to the differing diameters of the bearing areas upon the volume (6) being pressurized. The axial force, in turn, results in significant force being exerted by the toothed segment (21) on the abutting surface of the piston (20). These forces, in turn, lead to decreased operational time for the device.

The Examiner suggests that one of ordinary skill in the art would look to Nichols '427 to solve the shortcomings of EP '689. Nichols '427, however, teaches the inclusion of a separately mounted gear segment, and not the use of identical-diameter bearing areas, or having the bearing areas be the largest diameter of the shaft, as claimed in Claim 12. Thus, Nichols '427 provides absolutely no suggestion that it should be combined with EP '689 to solve the problems of that reference.

IV. CONCLUSION

Based on the above, Applicant submits that Claim 12, as amended above, is not taught, disclosed or claimed by any of the references cited by the Examiner, and should therefore be in condition for allowance as written. Furthermore, the remaining claims in the application, namely Claims 13, and 15-22, all depend from that claim, and should therefore likewise be deemed allowable. Therefore, reconsideration and passage to allowance of Claims 12-13, and 15-22 is respectfully requested.

Should anything further be required, a telephone call to the undersigned, at (312) 226-1818, is respectfully invited.

Respectfully submitted,

FACTOR & LAKE, LTD.

Dated: March 4, 2004



Jacob D. Koering
One of Applicants Attorneys

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Patent Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 4, 2004.

Jacob D. Koering

Name of Applicant, assignee, applicant's attorney or Registered Representative



Signature